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Screening organisation and recall rate in a regional breast screening programme

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Abstract:	<p>Objective: To use results on recall rates from a regional non-population-based breast screening programme to inform practice in a planned national population-based programme.</p> <p>Methods: We analysed data on rates of recall for further assessment in 27,327 mammographic screening episodes in 2015-16 in the breast screening programme in the city of Tbilisi, Georgia. Screening was by two-view digital mammography with double reading in women aged 40-70, and further assessment took place at the same clinic and during the same visit as the initial screening mammogram.</p> <p>Results: Recall rates were 46% (3,573/7,824) in 2015 and 27% (5,276/19,503) in 2016. Cancer detection rates were 8 per thousand in 2015 and 3 per thousand in 2016. Rates of recall were higher in younger women than in older, whereas rates of cancer detection were higher in older women.</p> <p>Conclusions: The recall rates, while lower in 2016 than in 2015 are still too high to manage in a nationwide population programme. The use of same-visit assessment is likely to be contributing to this. The national programme should consider separate assessment clinics and carry out audit of recalls to date.</p>

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Screening organisation and recall rate in a regional breast screening programme

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Running head: Screening organisation and recall rate

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Abstract

Objective: To use results on recall rates from a regional non-population-based breast screening programme to inform practice in a planned national population-based programme.

Methods: We analysed data on rates of recall for further assessment in 27,327 mammographic screening episodes in 2015-16 in the breast screening programme in the city of Tbilisi, Georgia. Screening was by two-view digital mammography with double reading in women aged 40-70, and further assessment took place at the same clinic and during the same visit as the initial screening mammogram.

Results: Recall rates were 46% (3,573/7,824) in 2015 and 27% (5,276/19,503) in 2016. Cancer detection rates were 8 per thousand in 2015 and 3 per thousand in 2016. Rates of recall were higher in younger women than in older, whereas rates of cancer detection were higher in older women.

Conclusions: The recall rates, while lower in 2016 than in 2015 are still too high to manage in a nationwide population programme. The use of same-visit assessment is likely to be contributing to this. The national programme should consider separate assessment clinics and carry out audit of recalls to date.

Proof

Since the results of the randomised trials of breast cancer screening showing a reduction in breast cancer mortality with mammography screening, many screening services have been established worldwide,¹ Such programmes require monitoring and quality assurance, to maximise the benefits of early detection, and minimise risks of false positive results and unnecessary investigative procedures.^{2,3} Typically in Europe, rates of recall for assessment range from 2-15% at first screen with cancer detection rates of 3-10 per thousand.²

It is planned to initiate a population-based national screening programme in Georgia, in the Caucasus. In recent years, there has been a regional programme in 18 centres in and around the capital city of Tbilisi. This programme has been advertised on mass media, but has not used individual invitation. The programme uses two-view, full field digital mammography with double reading and offers screening every two years. After having their mammogram, the screened women are asked to wait while the mammogram is read. They are then either dismissed with a negative result or asked to undergo further investigation, including cytological sampling or biopsy, and so receive a diagnosis on the same visit as the initial screen.

We had data on numbers screened, numbers recalled for assessment and numbers of cancers diagnosed for the years 2016 and 2017. These are shown by age in Table 1. There were 7,824 women screened in 2015 and 19,503 in 2016. Rates of recall were 46% overall in 2015 and 27% in 2016, with cancer detection rates of respectively 8 and 3 per 1,000 screened.

The reason for the very high rates of recall is likely to be multifactorial, and may include the relatively recent experience of asymptomatic mammography, professional attitudinal factors, and attributes of the population attending for screening, which may include a large proportion with symptoms. The latter is likely in view of the very high cancer accrual rate at older ages in 2015. The high recall rates do not seem to be driven specifically by prevalent screens. In 2015, there were 4,101 prevalent screens with 1792 (48%) recalls, and 3,723 incident screens with 1,601 (43%) recalls. The corresponding figures for 2016 were 9,461 prevalent screens with 2,619 (28%) recalls, and 10,042 incident screens with 2,657 (26%) recalls.

It seems likely that a contributory factor is the practice of assessment at the same visit as the screen. Both in Europe and the USA, same day assessment is associated with higher rates of recall for assessment.^{2,4} There was a considerable reduction in recall rates in 2016 compared to 2015, but rates were still high, particularly in comparison with the cancer detection rates. To continue the trend of reducing recall rates, a number of actions should be taken. First, audit of the radiological features prompting recall, in conjunction with final diagnosis, may identify subgroups of radiological features which do not require further assessment. Secondly, it would be valuable to ascertain presence of symptoms or palpable signs in the recalled population to determine to what extent the high recall rate is due to symptomatic benign disease. Finally, particularly in view of the greater volume implied by the move to a national population-based programme, the programme provider should consider changing to separate assessment clinics not on the same day as screening.

References

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Table 1. Numbers screened, recalled and diagnosed with cancer, Tbilisi Breast Screening Programme 2015-16						
Age group	2015			2016		
	Screened	Recalled (%)	Cancers (/1,000)	Screened	Recalled (%)	Cancers (/1,000)
40-44	1,811	1,039 (57)	6 (3)	4,307	1,571 (36)	8 (2)
45-49	1,692	878 (52)	8 (5)	4,100	1,209 (29)	9 (2)
50-54	1,686	657 (39)	9 (5)	3,905	950 (24)	12 (3)
55-59	1,257	441 (35)	13 (10)	3,417	724 (21)	15 (4)
60-64	775	285 (37)	13 (17)	2,169	433 (20)	9 (4)
65-70	603	273 (45)	12 (20)	1,605	389 (24)	8 (5)
Total	7,824	3573 (46)	61 (8)	19,503	5,276 (27)	61 (3)

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